TechniSat®

DIGITY CI

features motor control and software update via satellite

Operating Manual

DVB
Digital Video Broadcasting

EPG

3.0 ▶ 3.1

DiSEqC 1.2

With PCMCIA interface to accommodate a single CA module. Provides reception of unencrypted and encrypted (e.g. VIACCESS, IRDETO, CRYPTOWORKS, SECA etc.) ASTRA and EUTELSAT DVB programmes.

1 Contents

2

2 Illustrations

Remote control

EXTERNAL	Language selection
Sound on/off	On/Standby
	TV/Radio operation
Numeric keys	MONO1/MONO2
Info	Menu on/off
Arrow key up	Programme +
Volume -	OK
Arrow key left	Programme list on/off
EPG	Volume +
	Arrow key right
Programme -	Back
Arrow key down	
	Multi-function keys

3

Front panel

LED display

Programme selection up/down

DIGITY CI

TechniSat

DVB
Digital Video
Broadcasting

On/Standby
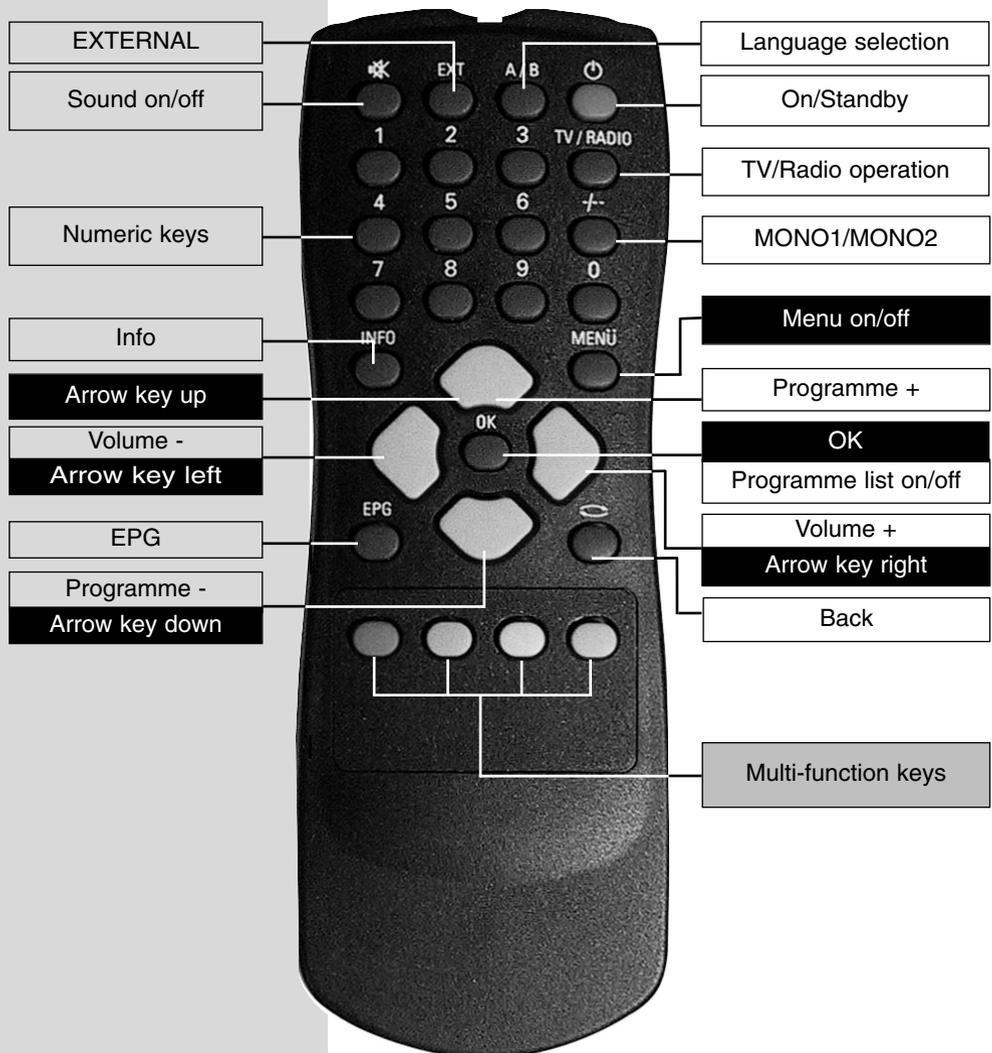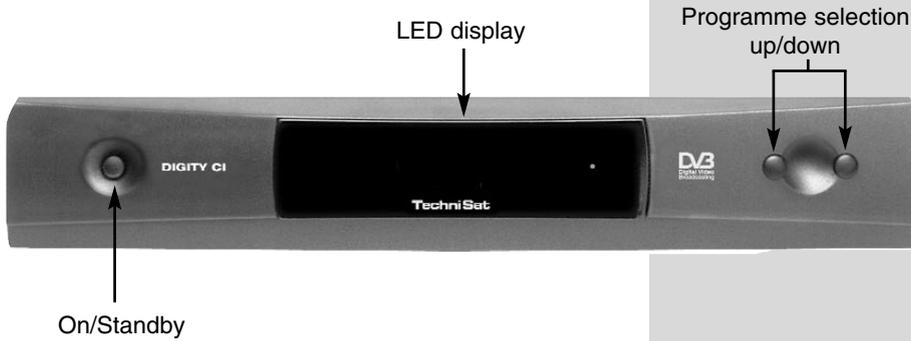
Rear panel

Inserting the CA module:
> Please follow the instructions of the card and module manufacturer.
> Insert the smartcard selected in the appropriate CA module.
> Now insert the module carefully in the slot, in the direction of the arrow
  (arrow facing up.

LNB input

SCART socket TV

Mains power connection

CE
MADE IN GERMANY

DC 13/18V
MAX 0.4A

L
AUDIO
R   OUT
ANALOG

TV

VCR

VORSICHT!
ELEKTROSCHOCK-GEFAHR
NICHT ÖFFNEN!
CAUTION!
RISK OF ELECTRIC SHOCK
DO NOT OPEN!

SERIAL PORT

AC 230V
MAX 29 VA

LNB
output

SCART socket
VCR

RS 232 interface

Audio output
left/right
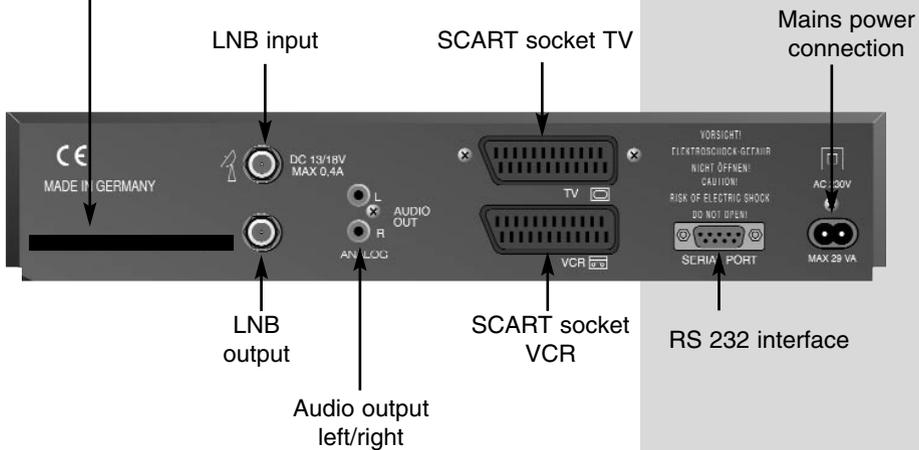
3 Please read this first

> Before commencing operation of the unit, please check that you have received all the parts intended. You should have the following:
1 Receiver, 1 mains power cable, 1 remote control unit,
1 operating manual, 1 guarantee card, 2 batteries (1,5V microcells).

> Insert the batteries supplied in the battery compartment of the remote control unit, ensuring correct polarity as indicated.

> Before connecting the receiver, please read the security notes in **Chapter 3**.

> **Chapters 4 and 5** describe connecting the receiver, and how to adapt the settings correctly for your external unit (dish antenna, LNB, etc.) as well as for the television set, VCR, etc.

> **Chapter 6** describes all the functions necessary for day-to-day operation, e.g. programme selection or volume adjustment.

> In **Chapter 7** you will find information on how to install new programmes or how to change the order of programmes in the list.
Chapter 8 describes the settings to be made when using a rotating antenna installation.

> The key technical terms used in this operating manual are explained in **ChapterI 9**.

> Technical data can be found in **Chapter 10**.

> Assistance in finding and correcting problems can be found in **Chapter 11**.

Important operating information

The implementation of an "On Screen Display" (information displayed on the TV screen, see example) simplifies the operation of the receiver, and reduces the number of keys required on the remote control. All functions are displayed on the screen, and can be set or changed with a few keystrokes. Related functions are grouiped together in "Menues". The selected function will be highlighted in colour. In the bottom line, coloured bars depict the function keys red, yellow, green and blue. These colour bars represent different functions in different menues, which can be executed by pressing the appropriate coloured key (multi-function key) on the remote control unit. The function keys are only active when a brief description is displayed in the appropriate field.

Help function:

Where available.in a menu,pressing the **blue** function key will display a help text - press again to close the display window.

6

Key description and terms that appear in the OSD menu are denoted in this manual in **bold** type.

Environmental note:

The packaging of your unit consists exclusively of recyclable materials. Please dispose of the packaging in the appropriate manner (Dual System in Germany).
Please ensure that spent batteries from the remote control as well as any electronic components are not disposed of in domestic refuse, but are dealt with appropriately (disposal through retailer, local authority).

Safety Note:

For your own protection, you should read these security notes carefully before you commence operating your new receiver.
The manufacturer accepts no liability for damage caused by inappropriate handling or through failure to observe the security precautions.

> In order to ensure adequate ventilation, place the unit on a smooth, straight and level surface, and do not place any objects on top of the unit. Ventilation slits are provided on top of the unit to allow warm air to radiate out of the unit.
> Do not place any burning items, such as lighted candles, on top of the unit.
> Do not expose the unit to dripping water or water sprays, and do not place any vases or other receptacles filled with water on top of the set.
> The unit should only be operated in a temperate climate.
> Do not open the unit housing! You are in danger of receiving an electric shock. If it is necessary to open the housing, this should be effected by trained personnel only.

In the following cases you should disconnect the unit from the power mains and consult a trained specialist:
> when the mains cable or the mains plug are damaged
> if the unit was exposed to humidity or liquid, or if liquid has entered the housing
> in case of significant external damage

When not in operation:

During electric storms, or when the unit is not being used for an extended period of time, it should be disconnected from the mains power.
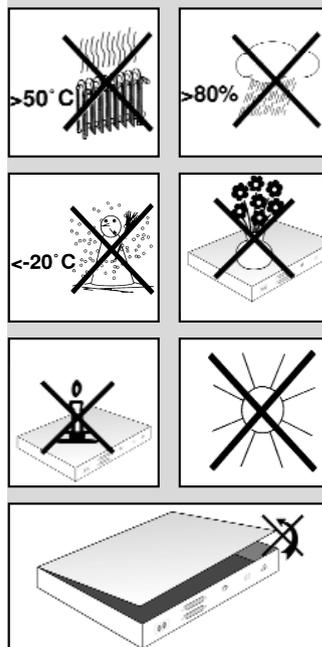
Connecting the DVB receiver to a satellite installation

a. Connect the LNB to the **LNB input** (LNB IN)of the DVB receiver.
b. Mains power connection
c. Connect the SCART output of a video recorder to the **VCR Scart socket** of the DVB receiver.
d. Connect the Scart connection of the DVB receiver with the television set.
e. Connect the **LNB output** (LNB OUT) to the LNB input of an analogue receiver.

Analogue Receiver

VCR

8
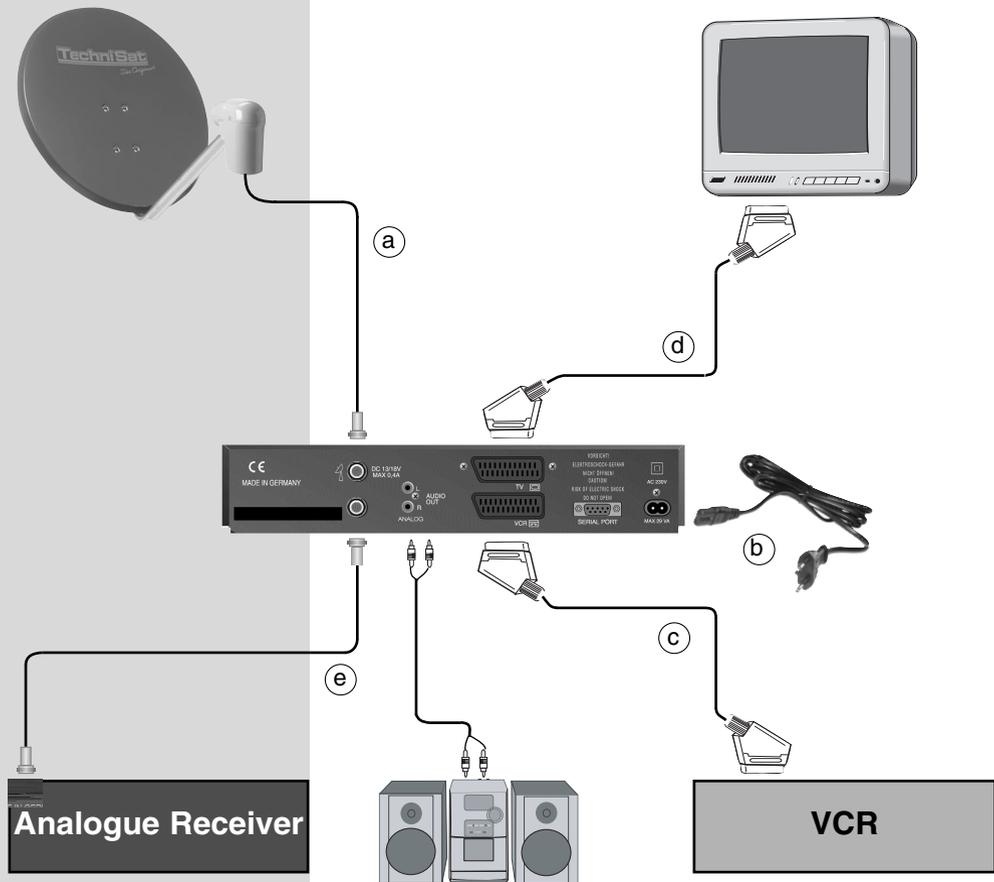
4 Connections

The references **a b c** etc. below refer to the illustration on page 8.

4.1 Mains power connection

The receiver should be connected to the mains power supply only once all other connections with the approrpiate units have been made. This will ensure that the receiver and the other components are not damaged.

b   When you have made all the above connections, use the enclosed mains power cable to connect the receiver to a mains power outlet with 230V/50 Hz AC power.

4.2 External unit

4.2.1 Single unit operation

a   Using a suitable coaxial cable, connect the **LNB input** of the receiver with the LNB of your external unit. Also note Point 5 "Installation".

4.2.2 Operating an additional receiver in a single-receiver installation

e   If you wish to operate another appliance in a single-receiver installation (e.g. analogue receiver or ADR receiver),you may connect the LNB input of the additional receiver with the **LNB output** of the DVB receiver by means of a suitable coaxial cable. In order for the satellite signal to be available to the additional receiver, your DVB receiver must be set to standby mode. If the DVB receiver is switched on, this will receive signal priority from the LNB control.

4.3 Connection to a television set

d   Use a SCART cable to connect the receiver (**SCART socket TV**) and the television set (SCART socket). If your television set is equipped for this, it will switch automatically to AV mode, and thus to satellite reception, when switched on.

4.4 Video cassette recorder (VCR)

c   Connect the video recorder to the SCART socket **VCR** . In playback mode the video recorder will supply a switching signal to the receiver. The video recorder signal will then be fed automatically to the TV set.

If your video recorder does not provide an electric signal, use the **EXTERN** key to switch your receiver to the external **VCR** input. Pressing this key again will revert to normal operation.

4.5 Hi-fi amplifier

To achieve the best sound quality, the receiver can be connected to a hi-fi amplifier. To do this, connect the **Audio R** and **Audio L** cinch sockets of the receiver with a suitable input of your hi-fi amplifier, e.g. CD or AUX, using a suitable cable. Note that the Phono imput is not suitable!.

4.6 Serial interface RS 232

The RS 232 interface serves to update the operating software, and to facilitate pre-programming by means of a PC.

5 Installation

Once you have connected your receiver, and have commenced operation, you can proceed to optimize the settings for your personal preferences, if you wish.

5.1 OSD language

(Fig. 5-1)

This feature gives you the opportunity to set the menu language in accordance with your preferences.
To change the OSD language, proceed as follows:
> Press the **Menu** key to display the **Main Menu** *(Fig. 5-1)*.
> Now use the **arrow keys up/down** to select the menu item **OSD language**.
> Confirm by pressing **OK**.
  The sub-menu **OSD language** will be displayed.
> Use the **arrow up/down keys** to select the desired language. Use the **arrow up/down keys** to move the marker up or down one line at a time, use the **arrow keys left/right** to move forward or back one page at a time.
> Store your selection in memory by pressing **OK**.
> Press the **Back** key to return to the **Main Menu**.

5.2 Basic settings

In order to gain optimum enjoyment from your DVB receiver, you may still have to adjust some settings to your individual preferences.
> Press the **Menu** key to display the **Main Menu**.
> Use the a**rrow keys up/down** to select the line **Settings**.

> Confirm by pressing **OK**. The sub-menu **Settings** will be displayed. *(Fig. 5-2)*
> Now use the **arrow keys up/down** to select the entry **Basic Settings.**
> Confirm by pressing **OK**. The menu **Basic Settings** will be displayed. *(Fig. 5-3)*
> Use the **arrow keys up/down** to move the marker around within this menu, and to make changes in individual positions according to your preference. When selecting a menu item please also note any help text displayed.
  The following settings can be customized:

(Fig. 5-2)

5.2.1 Parental control

Your unit is equipped with a child-proof function. This means that any programmes that you have blocked from access as described under Points 7.1.5 and 7.2 can only be selected after entering a four-digit PIN code. In this line you can press the **OK** key to switch the child-proof feature **on** or **off**.

5.2.2 Time difference GMT (hours)

Your unit is equipped with an integrated clock. This is set via satellite reception to **G**reenwich **M**ean **T**ime. If you have select **None** under **Country** (see 5.2.3), you merely need to use the **arrow keys right/left** or the **OK** key to correct the clock to your local time. In Germany the difference for standard time is **+1** hour, for daylight savings time the difference is **+2** hours.

(Fig. 5-3)

5.2.3 Country

This function provides for automatic change-overs from daylight saving time to standard time. Enter your home country in the line **Country**, using the **arrow keys left/right** to select the appropriate country.
> Press the **Back** key to return to the menu **Settings**, or press the **Menu** key to return to normal operation. The settings will be automatically stored in memory.

5.3 Audio/Video settings

In order to optimize the receiver in cojunction with your television set, you can effect the following settings in the menu **Audio/Video Settings**.
> Press the **Menu** key to display the **Main Menu.**
> Use the **arrow keys up/down** to select the line **Settings**.
> Confirm by pressing **OK**. The sub-menu **Settings** will be displayed. *(Fig. 5-4)*
> Now use the **arrow keys up/down** to mark the line **Audio/Video Settings.**

(Fig. 5-4)

11
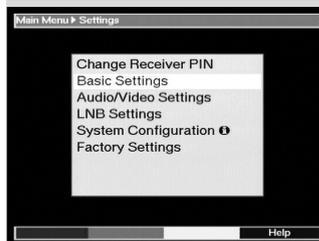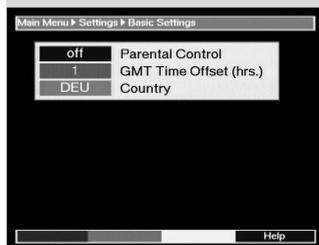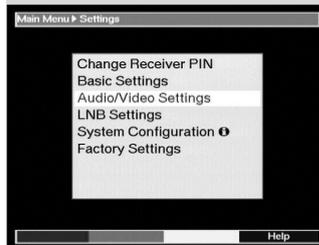
(Fig. 5-5)

> Confirm by pressing **OK**.
  The menu **Audio/Video Settings** will be displayed.
  (Fig. 5-5)
> Use the **arrow keys up/down** to move around in this
  menu, and to change the individual items as indicated.
  Where indicated, please take note of the help text
  displayed in conjunction with your selection.
  The following settings can be effected:

5.3.1 Image format TV set:

Use the **arrow keys up/down** to set the appropriate image
format for your TV set: **4:3** or **16:9**. This function allows the
image format to be adapted to your TV set automatically.

5.3.2 Language (Audio signal)

Use the **arrow keys left/right** in this line to select your
preferred language. Whenever this is broadcast (dual-tone
broadcasts) this will be selected automatically.

5.3.3 SCART mode

Use the **arrow keys left/right** in this line to select the setting
appropriate for your TV set, **FBAS** or **RGB**. For standard
sets retain the default setting **RGB**.

> Press the **Back** key to return to the menu **Settings**, or
  press the **Menu** key to return to normal operation. The
 settings will be automatically stored in memory.

5.4 LNB setting/Adjusting to external
unit/Satellite selection

(Fig. 5-6)

(Fig. 5-7)

When you have completed customizing the settings of your
receiver to your preferences, it may be necessary to adjust
the receiver to your antenna. The receiver is programmed at
the factory with all the ASTRA and EUTELSAT programmes,
and configured for a Universal LNB (see Anexure Technical
terms). These programmes can be received via an
appropriate antenna immediately after commencing operation
of your receiver, without any further adjustments.
If you wish to receive signals from other satellites, or if you
are using a different type of LNB,. you can make the
necessary adjustments to your receiver settings as follows:

> Press the **Menu** key to display the **Main Menu**. *(Fig.
  5-6)*
> Use the **arrow keys up/down** to select the line
  Settings.
> Confirm by pressing **OK**.
  The menu **Settings** will be displayed. *(Fig. 5-7)*
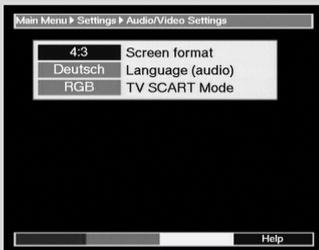> Now use the **arrow keys up/down** to select the line
  LNB Settings.

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> Confirm by pressing **OK**. The menu **LNB Settings**
  will be displayed. *(Fig. 5-8)*

The following settings can be effected in this sub-menu:

5.4.1 Switching DiSEqC on and off

DiSEqC (**Di**gital **S**atelliten **Eq**uipment **C**ontrol) is a digital
switching signal used to control DiSEqC-compatible
components via the antenna connection.
If your external unit is equipped with DiSEqC componen ts
you must activate the DiSEqC switching:

> In this line, use the **OK** key to switch the **DiSEqC on**
  or **off**.
  As only one LNB can be controlled when the DiSEqC
  switching is not activated, the menu will be restricted
  to the configuration of a single LNB.

5.4.2 Setting the switching matrix and the LNB characteristics

The menu lists the four switching criteria of the DiSEqC
switching feature.
Your unit is pre-programmed so that ASTRA will be received
in switch position A/A and Eutelsat will be received on switch
position B/A of a multi-switch. Should the switching matrix of
your receiving installation be configured differently, or if you
wish to receive other satellites, you can adjust your receiver
to the parameters of your receiving installation as follows.

> Use the **arrow keys up/down** to select the DiSEqC
  switch position (1-4) to which you wish to assign a
  satellite, by marking this line in blue (e.g.. **A/B 3 No
  Satellite**).
> Press **OK**.
  A table showing the satellites available for selection
  will be displayed.
> Use the **arrow keys up/down** to mark the required
  satellite.
  Use the **arrow keys up/down** to move up or down the
  menu one line at a time, use the **arrow keys left/right**
  to move forward or back one page at a time.
  Should the satellite you require not be listed, please
  select one of the reserve slots, designated **User1** to
  User 14.
> Confirm by pressing **OK**. The selected satellite will
  now be inserted at the previously marked poosition in
  the menu **LNB Settings.**

You should now proceed to work through the menu **LNB
Settings**, until the settings in this menu correspond with the
characteristics of your receiving installation. In the case of
any switching criteria you do not require, select the option
No Satellite.

(Fig. 5-8)

Example:

13

Main Menu ▸ Settings ▸ LNB Settings

LNB Settings

Single LNB   LNB type

low band   high band   transition
      9750   10600   11700

Test transponder

12109 Transponder frequency
horiz. Polarization
27500 Symbol rate

Signal |||||||||||||||||||||||||||||||||||||| 93
Quality |||||||||||||||||||||||||||||||||||| 9.9dB

Help
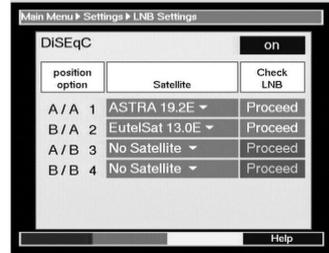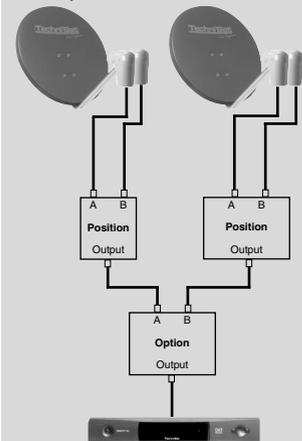
(Fig. 5-9)

5.4.3 Additional Settings

Once you have adjusted the switching matrix of your DVB receiver to the requirements of your receiving installation, you should now check and, if necessary, correct the other settings relating to your receiving unit.

> Use the **arrow keys left/right** to move the marker to the item **LNB Test**.
> Now, in the line whose setting you wish to change, use the **arrow keys up/down** to select the field **Continue**.
> Confirm by pressing **OK**. The menu **LNB Settings** will be displayed. *(Fig. 5-9)*

The following settings can be effected in this menu:

DiSEqC Type

> In this line, use the **arrow keys left/righ**t to select the type of LNB you are using. You can choose from **Single LNB**, **Quatro LNB**, **DisiCon 1 LNB**, **DisiCon 2 LNB**, **DisiCon 4 LNB**, **C-Band LNB** and a **User LNB,** for manual entry of LNB data.
> Press **OK** to accept the setting and store it in memory.

Test Transponder

The following items of this menu should only be entered when you wish to test the signal of a particular satellite.

Transponder frequency

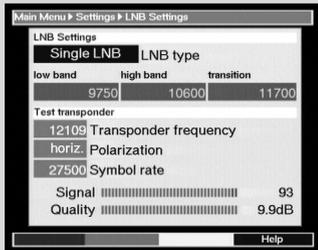In this line, use the **numeric keys** to enter a frequency on which digital programmes are broadcast.

Polarisation

Use the **arrow keys up/down** to enter the desired polarisation plane (**horiz**ontal or **vert**ical).

Symbol rate

The symbol rate indicates the volume of data transmitted per second. For example, this could be 27500 (27500 symbols per second). Use the **numeric keys** to enter the appropriate value.

User LNB

If you have selected the DiSEqC Type **User LNB,** you can select further parameters:

LOF low band

LOF (Local oscillator frequency) is the frequency used to convert the received frequency into the so-called 1. intermediate frequency, which can then be interpreted by the receiver. So-called Universal LNBs utilize 2 LOFs to cover the entire reception range of 10.7 to 11,8 GHz (low-band) and 11,7 to 12,75 GHz (high band).

> In this line, use the **numeric keys** to enter the LOF of the low band of your LNB.

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LOF high band

In this line, use the **numeric keys** to enter the LOF of the high band of your LNB.

Switchover LOF low//high

In this line, use the **numeric keys** to enter the frequency at which your LNB switches from the low band to the high band. Press **OK** to accept the setting and store it in memory.

Signal/Quality

If you have entered the parameters of the test transponder correctly, this line will indicate the signal strength and quality.

5.4.4 Rotating antenna

If you are operating the receiver in conjunction with a rotating antenna driven by a DiSEqC motor (Level 1.2), switch the **DiSEqC Control** (Point 5.4.1) **on** and please note **Point 8** of the operating manmual.

6 Operation

6.1 Switching on and off

> Switch the receiver on by pressing the **On/Standby** key on the front panel of the unit, or on the remote control.
> Pressing the same key again - on the unit or on the remote control - will switch the receiver off again.
> The unit is now in standby mode, ready for use.
  Please note:
  When switching the receiver off, all current settings are automatically stored in memory. For this reason the unit can only be switched on again after a period of approx. 15 seconds.

6.2 Programme selection

6.2.1 Using the Programme keys up/down

> You can switch from one programme to another, one slot at a time, using the **programme keys up/down** either on the receiver itself or on the remote control unit.

6.2.2 Using the numeric keys

> You can use the **numeric keys** to enter the desired programme number directly.

For example:

1		for programme slot 1
1,	then **4**	for programme slot 14
2,	then **3,** then **4**	for programme slot 234

When entering programme numbers with several digits, you have approx. 3 seconds time after pressing a key to complete the entry.

If you wish to enter a number consisting of a single or two digits, you can speed up the switching process by keeping the last digit depressed. for a few seconds.

6.2.3 Using the programme list

(Fig. 6-1)

> Press the **OK** key.

The programme list will now be displayed. *(Fig. 6-1)*
In TV mode, only TV programmes will be displayed, and in Radio mode only radio programmes will be shown. The programme currently selected will be highlighted in yellow.

> You can now highlight the desired programme, using the **arrow keys up/down**.
> Press **OK** to switch to the selected programme.
> Use the **arrow keys up/down** to move up or down in the list one slot at a time.
> Use the **arrow keys left/right** to move through the list one page at a time.

6.2.3.1 Selecting a list

In order to facilitate the easy location of programmes, the receiver features several programme lists. You can use a list of your own personal **Favourites** (see Point 7.1), or you can have the programmes displayed **alphabetically** or sorted according to **providers**.

> Press **OK**. The active programme list will be displayed.
> Now press the **red** function key to open a window showing the types of programme list available **(Favourites List, Providers** and **ABC ...)**.The active programme list type is highlighted. *(Fig. 6-2)*
> Use the **arrow keys up/down** to select, for instance, the programme list type **ABC** and confirm by pressing **OK**.

The alphabetically sorted programme list will be displayed, containing all programmes. *(Fig. 6-3)*

> Use the **arrow keys up/down** to mark the programme you wish to view.
> Confirm by pressing **OK**.
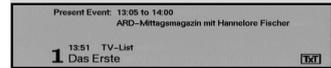
6.2.4 Calling up blocked programmes

If a programme is selected that is protected by the parental control function, a window will be displayed on the screen "**Enter PIN**" .

> Use the **numeric keys** to enter your PIN code.
The selected programme can now be viewed.

(Fig. 6-2)

(Fig. 6-3)

To make operation more convenient, you will only be asked to enter the PIN code once while the receiver is in operation, the programme remains unblocked for the remainder of the session. The parental control feature only becomes active again the next time the receiver is switched on.

6.2.5 Information box

Each time you switch programmes, an information box will be displayed briefly (Fig. 6-4) showing the programme slot and the programme name. In addition, other programme characte-ristics are indicated, such as **TxT** for vide otext, **16/9** for a programme in 16/9 format, **A/B** for various audio channels (e,g, a film synchronised in several languages, or various radio programmes) and a key symbol to indicate encrypted programmes.

Present Event: 13:05 to 14:00
ARD-Mittagsmagazin mit Hannelore Fischer

13:51   TV–List
1 Das Erste   TxT

(Fig. 6-4)

6.3 Volume control

You have the facility to vary the volume of your receiver. This makes for easy, convernient operation, since all important functions are thus combined on one remote control, so that you willhave to use the remote control of your television set only rarely. When the receiver is switched on, sound will be reproduced at the volume level last selected.

> Use the keys **Volume +** (louder) and **Volume -** (softer) to regulate the volume of your receiver.
> Press the key **Sound on/off** to switch the sound off (mute), press the key again to switch sound on again.

6.4 Reception of encrypted programmes

Your receiver is equipped with a Common Interface. To receive encrypted programmes with this, you must obtain a CA module as well as a valid smart card, and insert these in the appropriate slot provided on the rear panel:

> Insert a CA module in the slot.
> Insert the smart card in the card slot of the CA module. Ensure that the gold-coloured chip of the smart card is located on the upper side of the card, in the direction in which it is inserted.
> If an encrypted programme is selected for viewing, the receiver will automatically check the card slot, and will display the programme in unencrypted form, provided that a corresponding CA module and the corresponding valid smart card are inserted.

INFO Kamera:
(Fig. 6-5)

Live Fußball: UEFA Champions League
Spiel 1
Spiel 2
Spiel 3
Spiel 4
Konferenz
Info-Kanal
(Fig. 6-6)

INFO Timedirection
(Fig. 6-7)
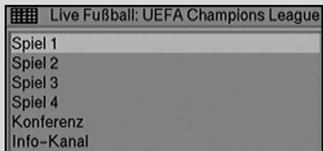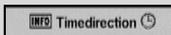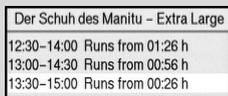
Der Schuh des Manitu – Extra Large
12:30–14:00 Runs from 01:26 h
13:00–14:30 Runs from 00:56 h
13:30–15:00 Runs from 00:26 h
(Fig. 6-8)

6.4.1 Multifeed options

Some programmes (e.g. Premiere Sport) provide the option of multifeed reception. This feature allows you, for instance, to view a sports event from the viewpoint of various camera angles, which you can select at will (e.g. Formula 1 racing) or to switch to various locations for the same sport (e.g. National Football League games). Where a programme, e.g. Sport 1, offers multifeed options, the window **Camera** *(Fig. 6-5)* will be displayed.

> To select one of the available options, press the **Info** key. An information window with the available options will be displayed. *(Fig. 6-6)*
> Use the **arrow keys up/down** to select the desired option.
> Confirm by pressing **OK**.
   Your receiver will now display the selected option.

6.4.2 Time control (Near Video On Demand)

Other channels (e.g. the PREMIERE DIREKT channels) offer the facility of time control. In this case, movies are available round the clock at staggered starting times.
Where a programme provides time control, this will be indicated by the display of an information window **Time Control** *(Fig. 6-7)*.

> To select on of the starting times available, press the **Info** key.
   A window showing the available starting times will be displayed *(Fig. 6-8)*.
> Use the **arrow keys up/down** to select the desired starting time.
> Confirm by pressing **OK**.
   If the programme availability has been confirmed, you will be able to view it at the selected starting time. Also refer to the programme guide of your provider for details.

6.5 Selecting a different language

Where a programme is broadcast in several languages, or

with several sound channels (A/B in the information window) you can select a different language or a different sound channel as follows:

> Press the key **Language Select**. Where available, a list of the currently broadcast languages will be displayed on the TV screen.
> Use the **arrow keys up/down** to select the preferred language.
> Confirm by pressing **OK**.

You can now enjoy the programme in the desired language.
You receiver is also equipped to receive mono broadcasts.

6.6 Switching between TV and Radio

The pre-programming feature includes television programmes
as well as radio programmes. If the latter are selected, the
TV image is switched off, and the screen displays only the
programme name.
> Use the **TV/Radio** key to switch the receiver into
  radio mode. The receiver will go to the last radio
  programme selected.
> Pressing the **TV/Radio** key again will return you to
  the television programme last viewed.

6.7 Return to previous programme

> Press the **Back** key on the remote control to return to
  the previously selected programme.
> Press the key again to revert to the programme
  viewed before the switch.

6.8 Display clock and programme information

This function allows you to display programme information
related to the programme currently selected.
> Press the **blue** function key to display information for
  the programme currently selected.
On the lower half of the screen you will see a display showing
the current time, the name of the current programme,
including the start and end times of the programme, where
these are broadcast by the provider.
> Where the information is available from the provider,
  pressing the **blue** function key again will display
  information relating to the following programme.

6.9 Additional programme information

Where broadcast by the provider, you can obtain additional
programme information by pressing the function
Programme info.
> Press the **yellow** function key to open an additional
  information window.
  This will again display information relating to the
  current programme.
> Press the **yellow** function key again to display
  information on the following programme.
> Press the **yellow** key again to remove the information
  window display and return to normal operation.

Transponder Information

Program	Sky News
Provider	BSKYB
Orbital Position	19.2E
Satellite	ASTRA
Transponder frequency	12551
Polarization	v
Band	high band
Symbol rate	22000
FEC rate	5/6
Service–ID	3995
PCR/Video/Audio–PID	305/305/306
Teletext–PID	

Signal level ||||||||||||||||||||||||||||||||||| 97
Signal quality ||||||||||||||||||||||||||||||||||| 9.0dB

(Fig. 6-9)

Sky News   2003/01/30   13:58
11:00 SKY News Today
14:00 News on the Hour
18:00 Live at Five
19:00 Live at Five
20:00 News on the Hour
22:00 Nine O'clock News
22:30 SKY News
23:00 SKY News at Ten
23:30 SKY News
00:00 News on the Hour
01:30 CBS News
02:00 News on the Hour
no more EPG data

Record   more...

(Fig. 6-10)

6.10 Transponder Information

> Press the **green** function key (Transponder Information), to display the data relating to the currently selected transponder *(Fig. 6-9)*.
> Press the **green** function key again to exit from transponder information.

6.11 Electronic Programme Guide

The Electronic Programme Guide function allows you to display programme schedules as well as content descriptions of various programmes on the television screen. You can thus very quickly obtain an overview of current programmes as well as of the schedule for the remainder of the day and the next few days, wherever this information is provided

6.11.1 Calling up the Electronic Programme Guide

> Switch on both the receiver and your TV set.
> Press the **EPG** key on the remote control of your receiver.The electronic programme guide for the TV channel currently being viewed will be displayed on your screen. This includes data relating to the programme for the current day *(Fig. 6-10)*.
The following functions are available:

6.11.2 Programme preview for following days

Wherever this information is provided, you can obtain infor-mation on the programm contents for the next few days rela-ting to the channel currently selected, by pressing the **arrow key right.**
Pressing the **arrow key left** will take you back to the previous table displayed.

6.11.3 EPG Information

Wherever this information is broadcast, the EPG function will provide you with information on various programmes:
> Use the **arrow keys up/down** to mark the desired programme.
> Press either the EPG key or the blue function key (more) to display the information.
Lengthy information text can be moved by using the **arrow keys up/down**, while the **arrow keys left/right** can be used to move through the text a page at a time.
> Press the **Back** key to return to the previous table.

6.11.4 Exiting from EPG

> Press the **Back** key to return to normal operating mode.

6.12 Timer

Your receiver is equipped with a timer. This allows you to make video recordings even when you are away. The timer mode is indicated by a blinking control LED in the display. Timer mode can be cancelled by pressing the **On/Standby** key.

6.12.1 Programming via EPG:

> Switch to the programme on which the item to be recorded is broadcast.
> Press the **EPG** key. The EPG table of the programme selected will be displayed.
> Use the **arrow keys up/down** to mark the required programme.
> Press the **yellow** function key (Record). The data relating to the marked programme will now be stored in the timer memory, and will be displayed on screen for control purposes. *(Fig. 6-11)*
> To delete a marked timer, press the **green** function key (Delete) and confirm when asked to do so on screen.
> Press the **Back** key to return to the EPG table, and, if you wish, to programme additional timer events

or

> Press the **TV/Radio** key to return to normal operation.

The receiver will now select the appropriate programme at the programmed time, and will, if instructed to do so, revert to stand-by mode at the end of the programme.

6.12.2 Manual programming/Changing timer set-
      tings

In addition to EPG timer programming you can also carry out manual programming of the timer. To do this, proceed as follows:

> Press the **Menu** key to display the **Main Menu**.
> Mark the item **Timer** and confirm by pressing **OK**. The Timer menu will be displayed. *(Fig. 6-12)*
> Press the **yellow** function key (New) to go to timer programming, in order to programme a new timer event. *(Fig. 6-13)*
> To alter an existing timer setting, mark this by using the **arrow keys up/down**. Press the **yellow** function key (Change) to access the settings of the marked timer.

For programming, proceed as follows:

Source

> Use the **arrow keys** to mark the item **Source**, then use the **OK** key to enter the required source (**TV** or **Radio**).
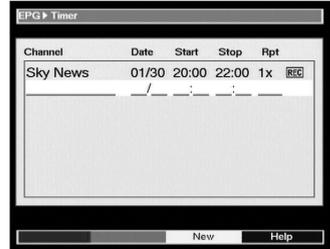
(Fig. 6-11)

(Fig. 6-12)

(Fig. 6-13)

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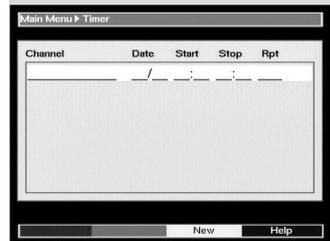
Channel

In this line, select the television channel/station on which you wish to record a programme:

> If necessary, use the **arrow keys** to mark the **Channel**.
> Press **OK**. A programme list will be displayed.
> Use the **arrow keys** to mark the desired programme.
> Confirm by pressing **OK**.
  The selected programme will now be accepted into the timer menu.

Date

> Use the **arrow keys** to mark the item **Date.**
> Use the **numeric keys** to enter the recording date.

Start

> Use the **arrow key right** to select the item **Start**.
> In this line use the **numeric keys** to enter the starting time.

Stop

> Repeat the steps as described under "Start" to enter the stop time, or end of programme.

**So that all events can be included, there should be an interval of at least one minute between the stop time of a timer event and the starting time of the next timer event!**

Repeat (optional)

> Use the **arrow key right** to mark the item **Rep**.
> Press **OK**.
  A selection window will be displayed, offering various repeating suggestions.
  1x   Timer on
  D   Daily repeat
  1xW   Repeat once a week
  1-5   Repeat only on weekday
  6-7   Repeat only on weekends
> Use the **arrow keys up/down** to select the desired function.
> Press **OK** to accept the setting into memory.
> When you have completed the programming, press the yellow function key (Accept) to accept and store the data in memory.
> Press the **TV/Radio** key to return to normal operation.

Type

> Use the arrow key right to mark the item **Type**.
> Use the OK key to enter the required type in this line.
  VCR
  Your receiver will be switched on resp. off for the selected programme. If the receiver is switched on by means of the timer, most of the functions of the remote control are disabled, as a safety precaution to prevent

inadvertent interruption of the recording.
Timer operation is indicated by blinking of the control
LED on the display.
Preselect
Your receiver switches itself on at the set time, and
selects the appropriate channel. In contrast to the
VCR setting, all functions of the remote control remain
active, and the unit does not switch off at the end of
the recording.

Note!!!
Please ensure that the information box shows the correct
time. If this is not the case, switch your receiver to ZDF or
any other channel providing standard clock time for at least
30 seconds, to allow the unit to synchronize with the correct
time.

6.13 Video text

6.13.1 Using the video text decoder of your television set

Where available from the provider, video text will be available
on your TV set. To operate the video text function use the
remote control of your television set. Should you experience
any problems with your television set, such as graphics and
text being superimposed, switch your receiver to **FBAS
mode** (Point 5.3).

6.13.2 Using the internal video text decoder

If your television set is not equipped with an integrated video
text decoder, you can still receive video text, where broadcast
by the provider, through your receiver.
> Select the programme on which you wish to view
  video text information.
> Press the **red** function key to switch on video text.
  (Fig. 6-14)
> Use the **numeric keys** to enter the video text page
  you wish to view. Your input will be displayed in the
  upper left corner of the screen.
  When you have entered the desired page number, the
  receiver will search for the selected page. As not all
  pages can be transmitted simultaneously, it may take
  a few seconds before your receiver finds the page and
  displays it on the TV screen.
  All video text providers use page 100 for their
  index/list of contents.
> Press the red resp. green function keys to move
  forward resp. backward in the text one page at a time.
> Press the **Back** key to return to normal operation.

(Fig. 6-14)

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7 Changing basic programming

7.1 Configuring the programme list This chapter describes how you can change the pre-programming as well as the Favourites list of your receiver to reflect your personal preferences. This function is also required to sort newly found programmes into the list after a programme search.

For your information, your receiver is equipped with two programme lists, the **Favourites List** and the **Total List.** The Favourites programme list includes all programmes you have taken into the list by the following procedure. The Total list includes all programmes.
This chapter also describes how you can delete programmes, or how you can block access by means of the parental control function. When calling up the programme list by pressing the **OK** key, the Favourites programme list will be displayed.
When the receiver is in TV mode you can view and change the list of TV programmes, and you can view and change the radio programmes in Radio mode.

7.1.1 Calling up the programme list

> Press **OK**.
> The Favourites programme list will be displayed. *(Fig. 7-1)*

7.1.2 Adding programmes to the programme list

To add programmes to the programme list selected, proceed as follows:

> Press the **red** function key (Category) to open a selection window that will allow you to switch from the Favourites list to the Total list. This Total list contains all available programmes. You can choose to sort the Total list according to **Providers** or alphabetically (**ABC...**).
> Use the **arrow keys up/down** to select a programme sorting type. (e.g. ABC)
> Confirm by pressing **OK**.
> An alphabetically sorted list will now be displayed. *(Fig. 7-2)*
> Press the **green** function key (Select) to display a selection window *(Fig. 7-3)*.
> Now use the **arrow keys up/down** to select the item **All**, to display all available programmes in the Total list, or **All new**, to display only the new programmes found by the last programme search.

(Fig. 7-1)

Favourite list ▼	
	1/294
1 Das Erste	19.2E
2 ZDF	19.2E
3 ProSieben	19.2E
4 SAT.1	19.2E
5 RTL Television	19.2E
6 RTL2	19.2E
7 Super RTL	19.2E
8 VOX	19.2E
9 KABEL1	19.2E
10 Bayerisches FS	19.2E
11 hessen fernsehen	19.2E
Category	Edit Mode

(Fig. 7-2)

ABC... ▼	All ▼
	63/294
✔ Das Erste	19.2E
✔ DeeJay TV	13.0E
✔ Discovery	19.2E
✔ Discovery CE	19.2E◄●○
✔ DISCOVERY CHANNEL	19.2E◄●○
✔ DISNEY CHANNEL	19.2E◄●○
✔ DSF	19.2E
✔ dw−tv	19.2E
✔ EbS	13.0E
✔ EDTV 1	13.0E
✔ EDTV BUSINESS	13.0E
Category selection	Edit Mode

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> Confirm by pressing **OK**. Now, depending on your sel-
ection, a programme list showing either all program-
mes or all new programmes will be displayed. Pro-
grammes already included in the Favourites list will be
indicated by a check-mark. *(Fig. 7-4)*

To add programmes to the Favourites list, or to delete them
from the list, proceed as follows:

> Press the **blue** function key (Change).
> Use the **arrow keys up/down** to mark a programme
you wish to add to the list.
> Press the **green** function key (Add) to add the marked
programme to the Favourites list.
To mark several programmes simultaneously, proceed
as follows:
> Press the **OK** key to go to selection mode. The
marked programme will now be indicated by a cross
on the left hand margin, and the menu will be
displayed in transparent form, superimposed on the
background image.
> Now use the **arrow keys up/down** to mark additional
programmes of your choice.
> When you have completed selecting and marking
programmes, press the **green** function key (Add) to
add the programmes to the Favourites list.
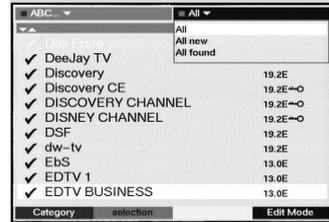
7.1.3 Deleting programmes

7.1.3.1 Deleting from the Favourites list

If the above procedure is used to mark programmes with a
cross that are already included in the Favourites list (check-
mark at right), these marked programmes can be deleted
from the user table by pressing the **green** function key. These
programmes remain stored in the Total list, and can be added
to the Favourites list again at any time.

7.1.3.2 Deleting from the Total list

To delete marked programmes from the Total list, press the
red function key (Delete). You will be asked to confirm the
command, then the programme will be deleted from the Total
list.

> Mark the programmes you wish to delete as described
above.
> Press the **red** function key (Delete). The following will
be displayed on screen "Do you really want to delete
the programme(s)?".
> Use the **arrow keys left/right** to select **Yes** or **No.**
> Confirm by pressing **OK.**

(Fig. 7-3)

(Fig. 7-4)

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Favourite list ▼		1/294
1	Das Erste	19.2E
2	ZDF	19.2E
3	ProSieben	19.2E
4	SAT.1	19.2E
5	RTL Television	19.2E
6	RTL2	19.2E
7	Super RTL	19.2E
8	VOX	19.2E
9	KABEL1	19.2E
10	Bayerisches FS	19.2E
11	hessen fernsehen	19.2E

remove   Parental Control   sort

(Fig. 7-5)

7.1.4 Sorting programmes

To sort the programmes on your Favourites list in the order you prefer, proceed as follows:

> Press **OK** to display the Favourites list.
> Press the **blue** function key (Change) to go to the programme list *(Fig. 7-5)*.
> Use the **arrow keys up/down** to mark the programme you wish to place at a different position in the list.
> Press the **yellow** function key to select the Sort function.
  A double arrow will be displayed next to the programme selected.
> You can now position the selected programme at any desired position in the programme list, using the **arrow keys up/down** or the **numeric keys**.
> Press the **yellow** function key (Save) to store the programme at the new position.
  To mark several programmes simultaneously, proceed as follows:
> Press **OK** to go to Select mode.
  The selected programme will now be indicated by a cross in the left margin.
> Now, use the **arrow keys up/down** to select additional programmes of your choice.
> When you have completed marking programmes in this manner, press the **yellow** function key (Sort).
> You can now use the **arrow keys up/down** and/or the **numeric keys** to move the marked programmes to the desired position in the programme list.
> Press the **yellow** function key (Save) to store the programmes at the new position.
> When you have completed configuring the programme list according to your preferences, press the **Back** key twice to return to normal operation.

7.1.5 Blocking access to programmes (parental control)

You have the facility to block access to any programme. A blocked programme can only be displayed on screen if the personal PIN code is entered after the programme has been selected. Once this code has been entered, the programme remains unblocked for the entire viewing session, i.e. until it is switched off, resp. switched into standby mode.

To block access to a programme, proceed as follows:

> Press **OK** to display a programme list.
> Press the **blue** function key (Change).
> Now use the **arrow keys up/down** to mark the programme to which you wish to block the access.

> Use the **green** function key to select the function **Parental Control**.
>   A key symbol will be displayed next to the selected programme.
> Repeat this procedure until you have blocked access to all the programmes you wish to mark in this way.
> When you have completed configuring the programme list according to your preferences, press the **Back** key twice to return to normal operation.
> To activate the parental control function, you must now enter your personal PIN code in the Point **Changing PIN**, you must then activate the parental control function as described in **Point 5.2 (Basic Settings).**

7.2 Changing the PIN

The Pin code is set at the factory (default value) to **0000**. In order to activate the parental control feature, you must input your own personal PIN code instead of the default setting.
Note! Be sure not to forget your PIN code. If this should happen, consult your specialist retailer!
To change the PIN code proceed as follows:
> Press the **Menu** key to display the **Main Menu**.
> Use the **arrow keys up/down** to mark the item **Settings**.
> Confirm by pressing **OK**.
>   The sub-menu **Settings** will be displayed.
> Use the **arrow keys up/down** to mark the item **Change Unit PIN**.
> Confirm by pressing **OK.** The menu **Change Unit PIN** will be displayed. *(Fig. 7-6)*.
> Now use the **numeric keys** to enter the current PIN code (default setting 0000).
> Use the **numeric keys** to enter the new PIN code you have chosen.
> Repeat entry of the new code.
> You have completed changing the PIN code. Press **Back** twice to return to normal operation.

Please note that you must still activate the parental control function as described under Point 7.3.

(Fig. 7-6)

7.3 Unblocking access control for individual programmes

To delete the parental control function for individual programmes, proceed as described under Point 7.1.5. Press the **blue** function key (Change), then enter the appropriate PIN code. Select the programme you wish to unblock, and remove the access control by pressing the **green** function key (Parental Control).
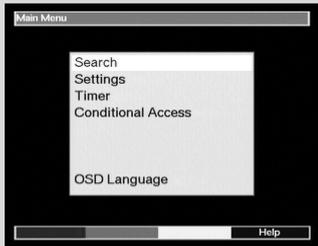
(Fig. 7-7)

(Fig. 7-8)

(Fig. 7-9)

7.4 Programme Search

As mentioned previously, your receiver is pre-programmed for all programmes available on the ASTRA and EUTELSAT satellites. To receive new programmes, or those of other satellites, several options are available to carry out a programme search/scan.
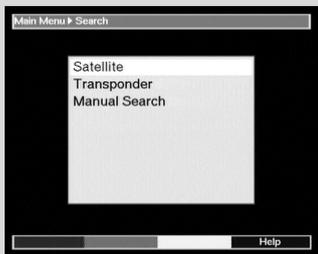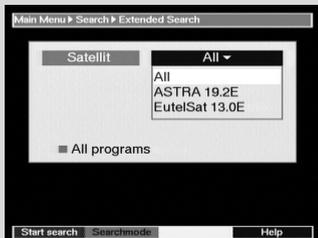
1. Satellite:

> **All**, to search all satellites selected in the menu LNB Settings (Point 5.4) for programmes
> **Satellite**, to scan only the selected satellite for programmes and bouquets.

2. Transponder:

Select this scan/search function to scan only a specific transponder of a satellite. This will search for individual resp. all programmes of a transponder.

3. Manual Search

Use this type of search to search for for specific programmes for which you have the unique PID numbers available.
When the search has been completed, a display will appear on your screen, informing you how many programmes were found and how many of these are new additions.
New programmes will be stored in the **Total List**. You can then add them to your **Favourites List** as described under **Point 7.1**.

> To perform a programme search call up the **Main Menu.** *(Fig. 7-7)*
> Use the **arrow keys up/down** to mark the item **Search.**
> Confirm by pressing **OK**.
> The sub-menu **Search** will be displayed. *(Fig. 7-8)*
> Use the **arrow keys up/down** to select the type of search you wish to perform.

7.4.1 Satellite

Activating this type of search will scan all active satellites (Point 5.4) and transponders for programmes.

> Use the **arrow keys up/dow**n to select the menu line **Satellite**.
> Press **OK** to display the corresponding sub-menu. *(Fig. 7-9)*
> Press **OK** again to open the selection table for the active satellites.
> Use the **arrow keys up/down** to mark the menu line **All**, to search all active satellites for programmes, or mark a specific satellite to search only this satellite for programmes.

> Press the **green** function key (Search mode) to decide whether you want to search only for free-to-air programmes (**Free programmes**), or whether you want to include encrypted programmes (**All programmes**).
> Confirm by pressing the **red** function key ("Start search").
  The search will be started. Please note any information displayed on your screen.
> Pressing the **red** function key again will stop the search procedure.

A full search can take approximately 15 minutes to complete. Please also note any information displayed on your screen.

7.4.2 Transponder

This menu item allows you to search a specific transponder (see Point 9 Technical terms) for programmes. To do this you will have to enter the appropriate transponder data.

> Use the **arrow keys up/down** to select the menu item.
> Confirm by pressing **OK**. The menu **Search Transponder** will be displayed. *(Fig. 7-10)*

(Fig. 7-10)

Satellite
In this line, set the satellite on which the desired transponder is located.

> Use the **arrow keys up/down** to mark the line **Satellite**.
> Press **OK.** A table showing the active satellites will be displayed.
> Use the **arrow keys up/down** to mark the desired satellite.
> Confirm by pressing **OK**.
  The selected satellite will now be displayed in the line **Satellite.**

Transponder frequency
> Use the **arrow keys up/down** to mark the line **Transponder frequency.**
> Using the **numeric keys**, enter the desired frequency in this line.

Symbol rate
The symbol rate indicates the volume of data transmitted per second. This value can be, for example, 27500 (27500 symbols per second).

> Use the **arrow keys up/down** to mark the item **Symbol rate.**
> Use the **numeric keys** to enter the appropriate symbol rate.
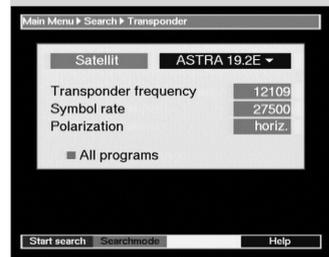
Polarisation

> Use the **arrow keys up/down** to mark the item
> **Polarisation.**
> Use the **OK** key to enter the polarisation plane
> (**horiz**ontal or **vert**ical) on which the desired
> programme is broadcast.
> Press the **green** function key to decide whether you
> wish to search only for free-to-air programmes (**Free**
> **programmes**) or whether you wish to include encryp-
> ted programmes (**All programmes**) in the search.
> Press the red function key (Start search) to commence
> the search..
> The search will be started. Please note any
> information displayed on your screen.
> The search procedure can be stopped by again
> pressing the red function key.

7.4.3 Manual search

If you are unable to find a programme using the search
methods as described under Points 7.4.1 and 7.4.2, it may be
necessary to enter additional unique. and programme-specific
PID numbers. These numbers can be found in the Internet, or
you can contact the respective programme providers for this
information.
To perform a manual search, call up the menu **Search**
Manual Search. *(Fig. 7-11)*

> Use the **arrow keys up/down** to select the menu item
> **Manual Search**.
> Confirm by pressing **OK**.
> The menu **>Search>Manual Search** will be
> displayed.

The menu differs from the menu **Transponder** only with
respect to the menu items **PCR PID**, **Audio PID** and
Video PID.

> Proceed as described under Point 7.4.3.
> Use the **arrow keys up/down** to mark the lines **PCR**
> **PID**, **Audio PID** and **Video PID,** then use the
> **numeric keys** to enter the corresponding numbers.

7.4.4 Integrating programmes after a search

As the search of one or more transponders progresses, you
can follow this on the screen. When the search has been
completed, the number of transponders found, will be display-
ed. In addition, you will be asked by the display *(Fig. 7-12)*
whether you wish to integrate the programmes found automa-
tically in the TV or radio programme lists. If you wish to incor-
porate the programmes automatically, you can decide
whether they should be added to the Favourites list in **sor-**
ted or **unsorted** order.

(Fig. 7-11)

(Fig. 7-12)

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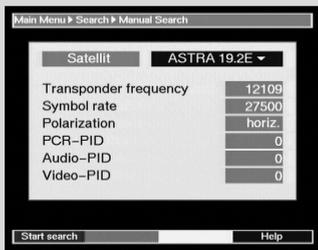
Sorted

The new programmes found will be sorted into the Favourites list according to a preprogrammed list.

Unsorted

The new programmes found will be added in unsorted order at the end of the Favourites list.

No

The new programmes found will not be added to the Favourites list.

> Use the **arrow keys left/right** to indicate whether you want to add the programmes in sorted or unsorted form.
> Confirm by pressing **OK**.
  Please take note of any additional information displayed on screen.
> Press **Menu** to return to normal operation
> Independently of whether you have added the newly found programmes to the Favourites list automatically, you can also, as described in Chapter 7.1, add these to the Favourites list manually at any time.

7.5 Restoring basic programming/ Delete all

You can revert to the original default setting for the LNB at any time. Also, if the programme list is out of date because of changes made by the providers, you can delete this list completely, in order to perform a new programme search. Please note that if you have performed the delete function you must first start a new programme search, and must then copy the programmes you wish to view from the Total list to the Favourites list before proceeding further.
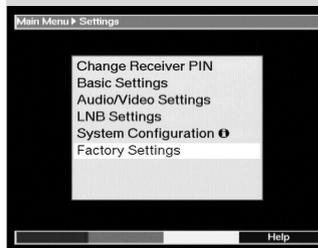
> Press **Menu** to display the **Main Menu**.
> Use the **arrow keys up/down** to select the menu item **Settings**.
> Confirm by pressing **OK**. The sub-menu **Settings** will be displayed. *(Fig. 7-13)*
> Use the **arrow keys up/down** to mark the menu item **Default setting**.
> Confirm by pressing **OK**. The sub-menu **Default setting** will be displayed. *(Fig. 7-14)*

7.5.1 Activating default setting

This function allows you to revert to the default setting programmed in the factory. It also deletes your own personal settings.

> Use the **arrow keys up/down** to mark the item **Activate default setting**.
> Press **OK**. The message "Do you really want to activate the default setting?" will be displayed.
> Use the **arrow keys left/right** to select **Yes** or **No.**
> Confirm by pressing **OK.**

Main Menu ▶ Settings

Change Receiver PIN
Basic Settings
Audio/Video Settings
LNB Settings
System Configuration ❶
Factory Settings

Help

(Fig. 7-13)

Main Menu ▶ Settings ▶ Factory Settings

Restore Factory Settings
Delete All Programs
Software download channel

Help

(Fig. 7-14)

7.5.2 Delete all programmes

This function allows you to delete totally the programme memory banks.

> Use the **arrow keys up/down** to mark the line **Delete all programmes**.

> Press **OK**. The message "Do you really want to delete all programmes?" will be displayed
  Use the **arrow keys left/right** to indicate **Yes** or **Abort.**

> Confirm by pressing **OK**.
  Please note any messages displayed on your screen.

7.5.3 Updating software

In addition, you have the facility to update the operating software of your receiver via satellite (ASTRA 19° East).

> Use the **arrow keys up/down** to mark the item **Update software**.

> Press **OK.** The sub-menu **Update software** will be displayed. *(Fig. 7-15)*
  To update your software, mark the item **Update software.**

> Use the **OK** key to switch the software update function **On**.

> Press the **Menu** key to return to normal operation.

In order for the new software to be downloaded overnight, the receiver must remain in stand-by mode. The download procedure is indicated by a blinking LED light on the unit. This procedure must not be interrupted by switching the unit on or off, nor may it be disconnected from the mains power supply.

> To start the update of the operating software manually, press the **red** function key (Test) in the menu **Software Update** .
  To download any new software that may be available, follow the instructions displayed on your screen.

Should the parameters of the data channel used to download software updates have changed, you can correct them in this menu as described under Point 7.4.3 (manual programme search). Current transponder data can be obtained from your specialist retailer. In general, however, you should not make any changes in this menu.

Note:

This function should not be activated if you have made changes in the menues "Basic Settings" and "LNB configuration", as any changes made there would be deleted when this function is performed, and you would have to repeat the changes there

(Fig. 7-15)

7.6 System configuration

You can use this menu item to view the specific unit data.
> Use the arrow keys up/down to mark this line in the sub-menu Settings.
> Confirm by pressing **OK**.
> Press the **Menu** key to return to normal operation.

7.7 Encryption system

Use this menu item to go to the sub-menues related to the CA module. Use the arrow keys to mark the CA module, then confirm by pressing **OK** to obtain information on the card currently inserted.

8 Operation in conjunction with a rotary antenna

Your receiver is equipped to operate in conjunction with a rotary antenna. The DiSEqC control feature (DiSEqC-Level 1.2) allows you to control an appropriate motor to rotate the antenna, via the coaxial connection.
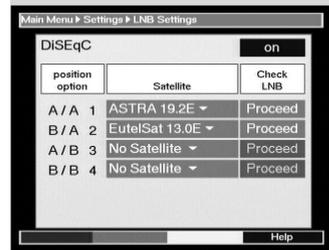> As described in Point 5.4, call up the menu **LNB Settings** *(Fig. 8-1) and switch the* **DiSEqC control** (Point 5.4.1) to **on**.
> Use the arrow keys up/down to select the DiSEqC position (e.g. A/B 3) to which you wish to allocate the motor-driven rotating antenna.
> Press **OK** to open a window allowing you to select the **Satellites** resp. the **Motor antenna** . *(Fig. 8-2)*
> Use the **arrow keys up/down** to select the item **Motor antenna**.
> Confirm by pressing **OK**.
> Observe the message displayed *(Fig. 8-3)* regarding the setting of East and West limits, confirm by pressing **OK**.

8.1 Eastern and Western limits

To avoid mechanical damage to the antenna dish or to the LNB, caused by obstacles that may be in the way, you should determine the maximum rotating range in both easterly and westerly direction.Where there are structural obstacles, such as chimneys or walls, these must definitely be considered when setting the East-West limits. If there are no obstacles in the rotating range, then you should determine the limits in such a way that they are just a little beyond the most extreme positions of the satellites from which you wish to receive signals.

8.1.1 Deleting existing limits

You should first delete any existing limits set.

(Fig. 8-1)

(Fig. 8-2)

(Fig. 8-3)

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(Fig. 8-4)

turn to sat
set east limit
set west limit
delete limits
auto focus

(Fig. 8-5)

ⓘ east/west limits deleted
To prevent damages on your
antenna, please set east and west
borders!
▶ OK ◀

(Fig. 8-6)

ⓘ east limit set

▶ OK ◀

(Fig. 8-7)

ⓘ west limit set

▶ OK ◀
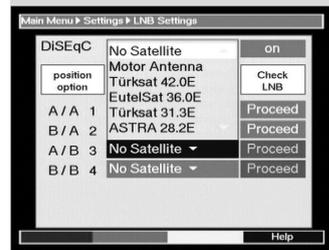
(Fig. 8-8)

> Use the **arrow keys left/right** to mark the item **LNB test.**
> Use the **arrow keys up/down** to go to the line **Motor antenna**, and mark the field **Continue**.
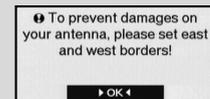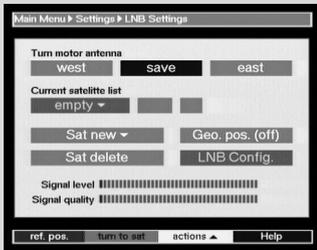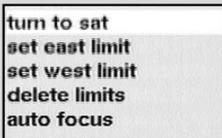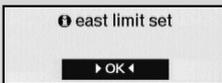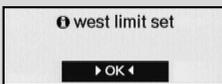> Confirm by pressing **OK**.
  The menu relating to settings for the motor antenna will be displayed *(Fig. 8-4)*
> Press the **yellow** function key (Action) to open a further window. *(Fig. 8-5)*
> Use the **arrow keys up/down** to mark the item **Delete limits**.
> Confirm by pressing **OK**, to transfer the selected action to the green function key.
> To delete the limits, press the **green** function key (Delete limits).
> A note will be displayed. Confirm by pressing **OK** *(Fig. 8-6).*

8.1.2 Setting Eastern limit

> To enter the Eastern limit, use the **arrow keys** to mark the field **Save**.
> Press the **arrow key right** to turn the antenna to the most easterly position possible, resp. the most **easterly position** you wish to include.
> Press the **yellow** function key (Action), to open the window showing the available actions.
> Use the **arrow keys up/down** to mark the entry **Set East limit**.
> Confirm by pressing **OK**.
> To set the Eastern limit, press the **green** function key (East limit), a note will be displayed *(Fig. 8-7)*, then confirm by pressing **OK**.

8.1.3 Setting Western limit

> To enter the Western limit, use the **arrow keys** to mark the field **Save**.
> Using the **arrow key left**, rotate the dish antenna to the most **westerly position** possible, resp. to the most westerly position you wish to include.
> Press the **yellow** function key (Actions) to open the window listing all the available actions.
> Use the **arrow keys up/down** to mark the item **Set West limit**.
> Confirm by pressing **OK**.
> To set the Western limit, press the **green** function key (West limit), a note will be displayed *(Fig. 8-8)*, then confirm by pressing **OK**.

8.2 Geo-positioning

If you have a suitable motor and know the geographic co-ordinates of your location, this function will make it easier to find the individual satellite positions. The co-ordinates of a number of German cities are listed in the Annexure (Point 12).

Note! You should only switch on the geo-positioning function if your DiSEqC motor supports this function.

> As described, call up the menu **LNB Settings**.
> Use the **arrow keys** to mark the field **Geo.Pos**.
> Confirm by pressing **OK**. The menu used to enter the co-ordinates of your location will be displayed. *(Fig. 8-9)*
> Press the **OK** key to switch the geo-positioning function **on** or **off**.
> Use the **arrow keys** to select the input field for **Longitude**.
> Use the **numeric keys** to enter your geographic longitude.
> Press the **arrow key left**.
> In this field, press the **OK** key to indicate whether the value refers to longitude East **(E)** or longitude West (**W**).
> Use the **arrow keys** to select the input field for **Latitude**.
> Use the **numeric keys** to enter your geographic latitude.
> Press the **arrow key left**.
> In this field, press the **OK** key to indicate whether the value refers to latitude North (**N**) or South (**S**).
> Press the **Back** key to return to the menu LNB Settings.

The co-ordinates for your location must be entered as a decimal figure with one decimal place. As co-ordinates are usually expressed in degrees, minutes and seconds, they must be converted to decimal values as follows:

The degree figure does not change. The minutes are divided by 60, and rounded to one decimal place. The result of this division is added to the degree figure.

Seconds are not considered, as they have no influence on the value of the first decimal place.

Example: Co-ordinates for Daun, Germany

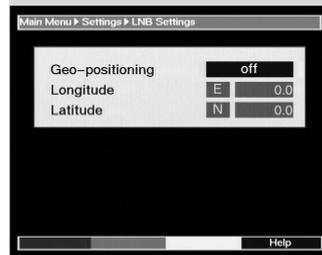| **Latitude** | **50°** | **11'** | (**45"**) | **N** |

| Longitude | 06° | 50' | (10") | E |

Converting the latitude (lat):

Lat.	**=**	**50**	**+**	**11/60**	
Lat.	**=**	**50**	**+**	**0,2**	(rounded)
Lat.	**=**	**50,2**			

(Fig. 8-9)

In the menu, enter the value for geographical latitude as a decimal value correct to one decimal place (**50,2**) .
The decimal equivalent of the longitude can be calculated in the same way.

8.3 Setting the satellite position

Work progressively through points 8.3.1 to 8.3.3 for each of the satellite positions to be entered. We recommend that you start by programming the most easterly satellite first. Then proceed to enter each additional satellite position, working in a westerly direction, until you reach the most westerly satellite position.
Your receiver is programmed at the factory for the most common satellite positions. In addition you can enter and configure user-defined satellite positions for any orbital position (User 1 to User 14).

8.3.1 Selecting satellite positions

8.3.1.1 Selecting a pre-programmed satellite position
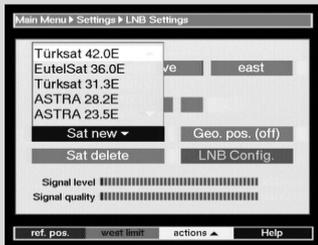
(Fig. 8-10)

> To enter a satellite position in the satellite list, use the **arrow keys** to mark the field **Sat new**.
> Confirm by pressingt **OK**.
  A list of all available satellite positions will be displayed. *(Fig. 8-10)*
> Use the **arrow keys up/down** to mark a satellite position that you wish to include in the satellite list.
> Press the **OK** key to accept the selection into the list.

In the position **Geo-positioning on** (Point 8.2) the dish antenna will now be automatically rotated to the programmed satellite position. The rotation procedure is indicated by a blinking message "**rotating**".
In the position **Geo-positioning off** you will have to rotate the antenna manually to the desired satellite position (Point 8.3.2.2).

8.3.1.2 Setting user-defined satellite positions (User Satellite)
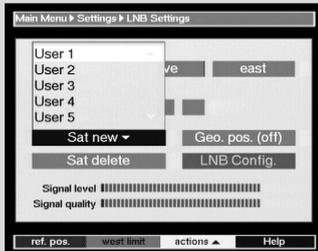
(Fig. 8-11)

> To accept a satellite position into the satellite list, use the **arrow keys** to mark the field **Sat new**.
> Confirm by pressing **OK**.
  A list of the available satellite positions will be displayed. *(Fig. 8-11)*
> Use the **arrow keys up/down** to mark a user-defined satellite position (User 1 to User 14).
> Press the **OK** key to display the menu for setting a test transponder. In this menu, set the parameters of the test transponder as well as of the LNB used, as described in **Point 5.4.3** .

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> When you have entered the settings for the test transponder, press the **Back** key to return to the menu related to motor antenna settings. The field for entering the orbital position is active.
> Use the **numeric keys** to enter the orbital position of the satellite and confirm by pressing **OK**.
> Press the **OK**-key to indicate whether you are entering a westerly (**W**) or an easterly (**E**) orbital position.

In the position **Geo-positioning on** (Point 8.2) you can now press **Rotate to Sat** (Point 8.4.1) to rotate the antenna dish to the programmed user satellite position.

In the position **Geo-positioning off** you will have to rotate the antenna manually (Point 8.3.2.2) to the required satellite position.

8.3.2 Adjusting the satellite antenna

To adjust the antenna correctly for the satellite selected, resp. to determine whether you can receive signals from the satellite selected at the position you have set, a test transponder setting is provided for each satellite.
The indication of signal strength and quality by this test transponder allows you to align the antenna precisely.

8.3.2.1 Test-Transponder/LNB-configuration

To change the data relating to the respective test transponder, proceed as follows:

> Use the **arrow keys** to select the entry **Current satellite list**.
> Press the **OK** key to open the satellite list.> Use the **arrow keys up/down** to select the satellite position on which you wish to change data.
> Confirm by pressing **OK**.
> Now, use the **arrow keys** to select the field **LNB config.** and press the **OK** key to confirm.
The menu **LNB Settings** will be displayed *(Fig 8-12)*
> In this menu, proceed as described in **Point 5.4.3** , and enter the data of the test transponder and of the LNB being used.
> Press the **Back** key to return to the setting for the motor-driven antenna.

(Fig. 8-12)

8.3.2.2 Antenna manual adjustment

You can achieve the optimum positioning of the antenna by referring to the signal strength and signal quality indicators displayed. Adjust the antenna so that both bar graphs show the maximum values..

> Use the a**rrow keys up/down** to mark the field **Save**.

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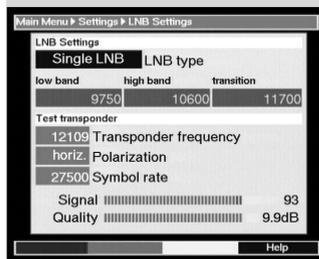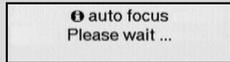
> Now use the **arrow keys left** (Field East will be marked) resp. **right** (Field West will be marked) to rotate the dish antenna to the required position. Simply keep the respective key depressed until the correct position is achieved.

8.3.2.3 Automatic fine adjustment (Autofocus)

You should carry out an automatic focussing procedure before saving the satellite position to memory. This will adjust the antenna to optimum reception by instrument means.

> Press the **yellow** function key (Actions) to open the window listing the available actions.
  Use the arrow keys up/down to mark the item **Autofocus**.
> Confirm by pressing **OK**.
> Press the **green** function key (Autofocus) to start the procedure.
  The message **Autofocus** will be displayed while the procedure is in progress *(Fig. 8-13)*

ⓘ auto focus
Please wait ...

(Fig. 8-13)

8.3.3 Saving satellite positions

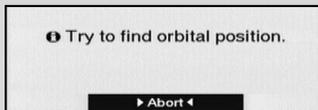When the autofocus procedure has been completed, you must still save the satellite position to memory.

> Use the **arrow keys** to mark the field **Save**.
> Confirm by pressing **OK**.
  The test transponder selected will now be used to check whether a signal is being received at this position. The function will also check whether there is a pre-programmed position in memory at this orbital position. *(Fig. 8-14)*
  If this is the case, the message : **Orbital position xx identified. Save satellite?** *(Fig. 8-15)*
> To save the satellite position to memory, use the **arrow keys left/right** to mark the field **Yes**, and confirm by pressing **OK**.
  If the check procedure of the test transponder does not identify any of the pre-programmed positions stored in memory, or if the signal received is too weak, this information will be displayed on screen. *(Figs. 8-16 and 8-17)*
> To save the satellite position in memory, use the **arrow keys left/right** to mark the field **Yes** and confirm by pressing **OK**.
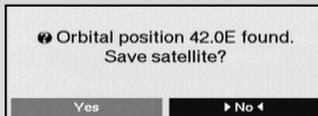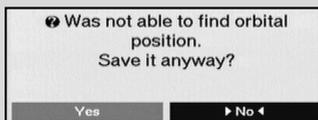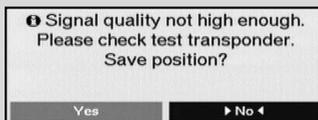
ⓘ Try to find orbital position.

▶ Abort ◀

(Fig. 8-14)

ⓔ Orbital position 42.0E found.
Save satellite?

Yes   ▶ No ◀

(Fig. 8-15)

ⓔ Was not able to find orbital
position.
Save it anyway?

Yes   ▶ No ◀

(Fig. 8-16)

ⓘ Signal quality not high enough.
Please check test transponder.
Save position?

Yes   ▶ No ◀

(Fig. 8-17)

8.4 List of current satellites

The satellite positions saved will be found in the satellite list. Positions not yet saved will be indicated by "*****" .

> To rotate the dish antenna to one of the positions on the list, use the **arrow keys** to mark the item **Current satellite list**.

> Press **OK**.
> Use the **arrow keys up/down** to select the desired position.
> Confirm by pressing **OK**.
  The dish will now be rotated to the selected position. The rotating procedure is indicated by a blinking display "**Rotating**" in the menu.

8.4.1 Selecting a satellite position

To rotate the antenna to the position indicated in the satellite list, your receiver is equipped with the function **Rotate to sat.**.
> Press the **yellow** function key (Actions) to open the window listing the available actions.
> Use the **arrow keys up/down** to mark the item **Rotate to sat**.
> Confirm by pressing **OK**.
> Press the **green** function key (Rotate to sat.) to rotate the antenna to the selected position.

8.5 Deleting a satellite position

To delete a satellite position from the satellite list, proceed as follows:
> Use the **arrow keys** to mark the item **Current satellite list**.
> Press **OK** to display the current satellite list.
> Use the **arrow keys up/down** to select the satellite you wish to delete.
> Confirm by pressing **OK**.
> Use the **arrow keys** to mark the item **Delete sat..**
> To delete the selected satellite, press **OK**, a confirmatory message will be displayed, then press **OK** again.

8.6 Reference position

When installing the external installation, the motor must be parked in the reference position (**0°**). For this purpose you can use the function "**Go to reference position**" at any time to rotate to this position (**0°**).
> Press the **red** function key (Ref.pos) to rotate the antenna automatically to the reference position.

9 Technical Terms

Antenna cable:
Connecting cable from the modulator of the satellite receiver to the antenna input socket of the television set; used as an alternative where no SCART socket is available

Coaxial cable:
Connecting cable between LNB and satellite receiver, used to transmit the signal received, as well as to supply the LNB with power

Data compression/MPEG1/MPEG2:
To transmit the current television standard (625 lines repeated 50 times per second) results in a digital data volume of 216 MBit/s. This would require bandwidths that cannot be provided by either terrestrial or satellite sources. The volume of data is thus compressed by electronic means to reduce the volume. In Europe, the MPEG-2 standard has been laid down as the international standard for data compression. MPEG2 is a further development of MPEG1

Deemphasis:
Adaptation of the audio frequency profile to the broadcast signa, this is defined by the broadcast parameters of the satellite

DiSEqC:
Digital Satellite Equipment Control: a digital switching system used to control DiSEqC-compatible components of the extenbal installation via the antenna cable.

DVB:
Digital Video Broadcasting: a universal digital broadcast standard used for all possible types of data, such as pictures, graphics, sound and text, in an appropriate form providing appropriate quality

External unit:
Description used for the complete system mounted outdoors, consisting of parabolic dish antenna, as well as one or more LNBs, used to receive signals from one or more satellites

Frequency:
Physical measurement, indicated the number of wave-cycles per second, expressed as Hertz (Hz)

Frequency range:
a) Satellite resp. LNB:
11 GHz range from 10,70 GHz to 11,70 GHz, 12 GHz range from 11,70 GHz to 12,75 GHz

b) Receiver: Intermediate frequency or 1.IF 950 to 2150 MHz

Unit	Description	Cycles per second
1 Hz	1 Hertz	1
1 kHz	1 Kilohertz	1.000
1 MHz	1 Megahertz	1.000.000
1 GHz	1 Gigahertz	1.000.000.000

LNB/LNC (Low Noise block converter):
The receiving unit at the focal point of the parabolic dish antenna. Converts the satellite frequency range to that of the intermediate frequency of the receiver

LOF:
Local oscillator frequency, stated in MHz or GHz, differs depending on the LNB and frequency range received.
Receiving frequency of the receiver = broadcast frequency of the satellite - LOF

Modulation at 22 KHz
Next to the 14/28 Volt switching facility, this serves to switch between 2 LNBs. When used with a Universal LNB it serves to switch to the high band

Modulator
Switching facility in the satellite receiver or video recorded, used to connect to the television set using antenna cable

Mode:
determines whether a mono or a stereo programme will be received

Multyfeed:
External installation consisting of a single parabolic dish and several LNBs, used to receive signals from several satellites

Parabolic dish:
Dish antenna with parabolic shape, made of metal or coated synthetics, serves to focus the electromagnetic waves received from the satellite in a focal point

Polarisation plane:
In order to better utilise the available frequency range, satellites will broadcast neighbouring frequencies using opposite polarisation (horizontal and vertical, or dextrorotatory and laevorotatory). To receive both polarisation planes you will require two single LNBs or a single V/H LNB.

Satellite:
Designation of a satellite, usually coupled with its orbital position,

ASTRA	19° East
EUTELSAT	13° East

Satellite receiver:

The signals received and converted by the LNB cannot be interpreted by the television set. The satellite receiver further converts these signals in such a way that it feeds audio and video signals (AV) to its output connections in a form that can be used by the television set.

SCART:

Connector plug used for television sets, video recorders, satellite receivers and other appliances in the field of entertainment electronics to transmit Audio and visual signals (AV).

Software update:

Digital television is a new medium. Apart from the improved picture and sound quality, it also provides the facility for interactive services. These services are constantly being developed and improved by providers. To utilise these services, it may become necessary from time to time to update the operating software of the receiver.

Transponder:

This processes one or several programmes within the satellite. That is, reception of data from the ground station, amplification and broadcast of the signal back to earth.

Universal-LNB:

Term used to describe a triple-band LNB. Used to receive the ranges FFS (10,70 - 11,70 GHz), BBS (11,70 - 12,50 GHz) and FFS High Band (12,50 - 12,75 GHz). The entire range is divided into two bands:
Low Band: 10,70 - 11,80 GHz; LOF 9750 MHz
High Band 11,70 - 12,75 GHz ; LOF 10600 MHz

Supply voltage:

LNBs receive their power supply via the coaxial cable. To this end the receiver delivers a supply of 14 or 18 Volts

Intermediate frequency:

The frequency range broadcast by satellites cannot be transmitted via a cable. The LNB therefore converts the incoming signal to a signal in the intermediate frequency range of 950 to 2050 MHz. This signal can be transmitted via cable, and can be interpreted by the receiver.
1. IF = Intermediate frequency

10 Technical data

DBS-Tuner:
Input frequency range	950 .... 2150 MHz
Input level range -	60 dBm ... - 25 dBm
DBS tuner input	F -connector
Input/output impedance	75 Ohm
Output for 1.IF	950 ... 2150 MHz (loop through)
AFC capture range	+/- 3 MHz
Demodulation	Shaped QPSK
Symbol rate	1 ... 45 Mbaud/s, MCPC
FEC	Viterbi and Reed-Solomon
Viterbi rates	1/2, 2/3, 3/4, 5/6, 7/8, automatic adaptation
Roll-off Factor	35 %

Demultiplexing: in accordance w. ISO 13818-1

Video decoding:
Video compression	MPEG-2 and MPEG-1 compatible
	Up to MP@ML (main profile @ main level)
Video standard	PAL / 25 Hz
Active image size	720 pixels x 576 lines
Picture format	4 : 3 / 16 : 9
Picture material 16:9	Automatic adjustment for 16:9 TV sets (via SCART)
	Letterbox filtering for 4:3 TV sets

Audio decoding:
Audio compression	MPEG-1 & MPEG-2 Layer I and II
Audio mode	Dual (main/sub), Stereo
Sampling frequencies	32 kHz, 44.1 kHz, 48 kHz,

Audio parameters:

Input analogue:
Input levels L/R	0,5 V r.m.s. (nominal)
Input impedance	> 40 kOhm

Output analogue:
Output levels L/R	0,5 V r.m.s. (nominal)
Output impedance	600 Ohm
THD	> 60 dB (1 kHz)
Cross-talk	< - 65 dB
Iniotial volume	stores last value selected

Video parameters:

Input:

Input level	FBAS 1 Vs-s +/- 0,3 dB into 75 Ohms
Input level RED	0,7 Vs-s +/- 0,1Vs-s into 75 Ohms
Input level GREEN	0,7 Vs-s +/- 0,1Vs-s into 75 Ohms
Input level BLUE	0,7 Vs-s +/- 0,1Vs-s into 75 Ohms

Teletext

Teletext filtering	corresponding to ETS 300 472 standard
Display teletext data	(FBAS) corresponding to ITU-R BT.653-2 lines: 6-22 and 320-335

TV-SCART:

Output:	switchable FBAS or RGB

VCR-SCART:

Input:	FBAS or RGB
Output:	FBAS

Serial interface RS 232:

Type	RS 232, bi-directional
Bit rate	115 kBit/s
Connectior	D-SUB-socket, 9 pin
Function	Update f.operating software

LNB power supply:

LNB power	400 mA max.; double-insulated
LNB voltage vertical	<14,0V no load, > 11,5 V at 400 mA
LNB voltage horiz.	< 20V no load, > 17,2 V at 400 mA LNB switched off in stand-by mode
22 kHz modulation:	22 kHz, Amplitude 0.6 V +/- 0.2 V

Programme memory:
999 TV programmes
999 RADIO programmes

DiSEqC Control:
DiSEqC 1.0 and DiSEqC 1.2

EPG data:
EPG preview

Timer:
32 events one year ahaead

OSD languages:
German, English

Remote control system   RC-5

Subsystem adress	10 (SAT 2)
Modulation frequency	36 kHz
Infrared wavelengthe	950 nm

Power supply:

Mains power adapter:

Power requirement:

< 22 W	(in operation, horizontal polarisation/ 400 mA LNB power)
< 12 W	(in operation, excl. LNB)
< 10 W	(Stand-by Mode)

Mains voltage:
180 V.... 250 V / 47...63 Hz AC

General:

Ambient temperature	+15°C...+35°C
Humidity	< 80%
Dimensions (WxDxH):	305 mm x 135 mm x 65 mm
Weight:	0,8 kg

11 Trouble-shooting guide

Dear customer,

we would like to point out once again that, if you experience the following problem, you should first follow our suggested solution before contacting the repair service.

The unit does not function properly (controls do not respond, image frozen ...)

> Disconnect the mains power supply for approx. 5 seconds, then connect it again.

> Then switch the receiver on again.

If the problem persists, you should then contact your repair service.

?

Problem	Possible cause	Solution
Various programmes not shown in programme list	Incorrect programme list selected	Select different programme list (see Point 6.2.3.1)
Sound OK, screen blue	Unit is in Radio mode	Switch to TV mode
Programmes such as Pro 7, Sat 1, TM3, Kabel 1, DSF and HOT temporarily faulty	Interference by wireless telephones (DECT standard)	Increase distance between receiver and phone station
Controls cannot be operated	Data stream defective -->unit blocked	Pull mains plug for approx. 5 seconds, then switch unit on again
Remote control not working	Batteries are spent	Fit new batteries
Intermittent square blocks on screen. Temporary frozen picture, no sound, screen sometimes black with message "no signal".	Heavy rain or snow	Remove snow from antenna
	Antenna position incorrect	Adjust antenna position
	Antenna dish may be too small	Adjust antenna position
	An obstacle between the dish and the satellite (e.g. a tree)	Mount antenna in position with clear view
No picture, no sound, LED on	Short circuit in LNB connection	Switch unit off, eliminate short circuit, switch unit on again
	Cable connection defective or not present	Check all cable connections
	LNB defective	Replace LNB
	Incorrect external unit selected on receiver	Correct setting (see Point 5.4)
	Antenna adjustment incorrect	Adjust antenna position
No picture, no sound, LED not on	No mains power	Check mains cable and plugs
No reception of programmes that were in order previously	Antenne verstellt oder defekt	Check antenna
	Programme has moved to a different transponder	Perform search procedure (see Point 7.4)
	Programme no longer being broadcast	None
Antenna cannot be rotated	Motor not compatible with DiSEqC 1.2	Use suitable motor

12 Annexure

Co-ordinates of selected German cities (1)		
City	**Geogr. Longitude (E)**	**Geogr. Latitude (N)**
Aachen	6,1	50,8
Aalen	10,1	48,8
Augsburg	10,9	48,4
Aschaffenburg	9,2	50,0
Bad Neuenahr-Ahrweiler	7,1	50,6
Bad Reichenhall	12,9	47,7
Baden Baden	8,2	48,8
Bamberg	10,9	49,9
Berlin	13,4	52,5
Beucha	12,7	51,3
Bielefeld	8,5	52,0
Bonn	7,1	50,7
Brandenburg	12,6	52,4
Braunschweig	10,5	52,3
Bremen	8,8	53,1
Bremerhaven	8,6	53,6
Celle	10,1	52,6
Chemnitz	12,9	50,8
Cottbus	14,3	51,8
Darmstadt	8,7	49,9
Daun	6,8	50,2
Dippach	10,1	51,0
Donauwörth	10,8	48,7
Dortmund	7,5	51,5
Dresden	13,7	51,1
Duisburg	6,8	51,4
Düsseldorf	6,8	51,2
Eisenach	10,3	51,0
Elmshorn	9,7	53,8
Emden	7,2	53,4
Erfurt	11,0	51,0
Essen	7,0	51,5
Flensburg	9,4	54,8
Frankfurt/M.	8,7	50,1
Frankfurt/O.	14,5	52,3
Freiburg/Br.	7,9	48,0
Freising	11,8	48,4
Fulda	9,7	50,6
Fürstenberg	14,7	52,1
Fürth	11,0	49,5

Co-ordinates of selected German cities (2)		
City	**Geogr. Longitude (E)**	**Geogr. Latitude (N)**
Garmisch-Partenkirchen	11,1	47,5
Gera	12,1	50,9
Görlitz	15,0	51,2
Göttingen	9,9	51,5
Halberstadt	11,0	51,9
Halle/Saale	12,0	51,5
Hameln	9,4	52,1
Hamburg	10,0	53,6
Hamm	7,8	51,7
Hannover	9,7	52,4
Heide	9,1	54,2
Heidelberg	8,7	49,4
Heilbronn	9,2	49,2
Hildesheim	10,0	52,2
Hof	11,9	50,3
Ingolstadt	11,4	48,8
Iserlohn	7,7	51,4
Kaiserslautern	7,8	49,5
Karlsruhe	8,4	49,0
Kassel	9,5	51,3
Kempten/Allgäu	10,3	47,7
Kiel	10,1	54,3
Koblenz	7,6	50,4
Konstanz	9,2	47,7
Köln	7,0	51,0
Krefeld	6,6	51,3
Landau/Pfalz	8,1	49,2
Landshut	12,2	48,5
Leipzig	12,4	51,3
Ludwigshafen	8,4	49,5
Lübeck	10,7	53,9
Lüneburg	10,4	53,3
Magdeburg	11,6	52,1
Mainz	8,3	50,0
Mannheim	8,5	49,5
Minden	8,9	52,3
Mönchengladbach	6,4	51,2
Mühlhausen	8,7	49,3
München	11,6	48,1
Münster	8,9	49,9

Co-ordinates of selected German cities (3)		
City	Geogr. Longitude(E)	Geogr. Latitude (N)
Neubrandenburg	13,3	53,6
Neumünster	10,0	54,1
Nienburg	11,8	51,8
Nordhausen	10,8	51,5
Nürnberg	11,1	49,5
Oberhausen	6,9	51,5
Offenburg	8,0	48,5
Oldenburg/Holsn.	10,9	54,3
Oldenburg	8,2	53,2
Osnabrück	8,1	52,3
Paderborn	8,8	51,7
Passau	13,5	48,6
Plauen	12,1	50,5
Potsdam	13,1	52,4
Ravensburg	9,6	47,8
Regensburg	12,1	49,0
Reutlingen	9,2	48,5
Rostock	12,1	54,1
Saarbrücken	7,0	49,2
Salzgitter	10,4	52,1
Salzwedel	11,2	52,9
Schweinfurt	10,2	50,1
Schwerin	11,4	53,6
Siegen	8,0	50,9
Solingen	7,1	51,2
Speyer	8,4	49,3
Starnberg	11,3	48,0
Stuttgart	9,2	48,8
Trier	6,7	49,8
Tübingen	9,1	48,5
Ulm	10,0	48,4
Weimar	11,3	51,0
Wiesbaden	8,2	50,1
Wilhelmshaven	8,1	53,5
Wismar	11,5	53,9
Wolfsburg	10,8	52,4
Wuppertal	7,2	51,3
Würzburg	9,9	49,8
Zweibrücken	7,4	49,3
Zwickau	12,5	50,7

For everyday use

Switching on and off

> Switch the unit on by pressing the **On/Stand-by** key, either on the receiver or on the remote control unit.
> Pressing the same key again, either on the receiver or on the remote control unit, will switch the receiver off again.
> The receiver is now in Stand-by mode.

Programme selection

Using the programme keys up/down

> Use the **programme keys up/down** to switch from one programme to another, one slot at a time. You can use the keys either on the receiver panel or those on the remote control unit.

Using the numeric keys

> Enter the desired programme number using the numeric keys. For example:

1   for programme slot **1**

1,   then **4**   for programme slot **14**

2,   then **3,**   then **4**   for programme slot **234**

When entering programme numbers with more than one digit, you have approximately 3 seconds after pressing each key to complete the entry.

If you wish to enter a number consisting of only one or two digits, you can speed up the selection process by keeping the key depressed a little longer on the last digit.

Volume control

> To control the volume of your receiver, use the keys **Volume +** to increase the volume and **Volume -** to decrease the sound volume.
> Press the key **Sound on/off** to switch the sound off (mute), press the key again to switch sound on again.

TV/radio switching

The pre-programming of your receiver includes radio as well as television programmes You can thus also enjoy your favourite radio programmes in digital quality, by switching to Radio mode. In this case the corresponding TV image is not displayed, you will see a blank screen with the programme name displayed.

> Use the **TV/Radio** key to switch the receiver to radio mode.

    The receiver will now switch to the radio programme last selected.

> Press the **TV/Radio** key again to switch to the television programme last selected.